
HL6314MG

AlGaInP Laser Diode

HITACHI

Description

The HL6314MG is a 0.63 μm band AlGaInP laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source for laser pointers and optical equipment for amusement.

Application

- Laser pointer

Features

- Visible light output: 635nm typ.
(nearly equal to He-Ne gas laser)
- Optical output power: 3 mW CW
- Low operating current: 30 mA typ.
- Low operating voltage: 2.7 V max.,

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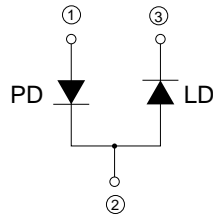
Package Type

- HL6314MG: MG



Internal Circuit

- HL6314MG



Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

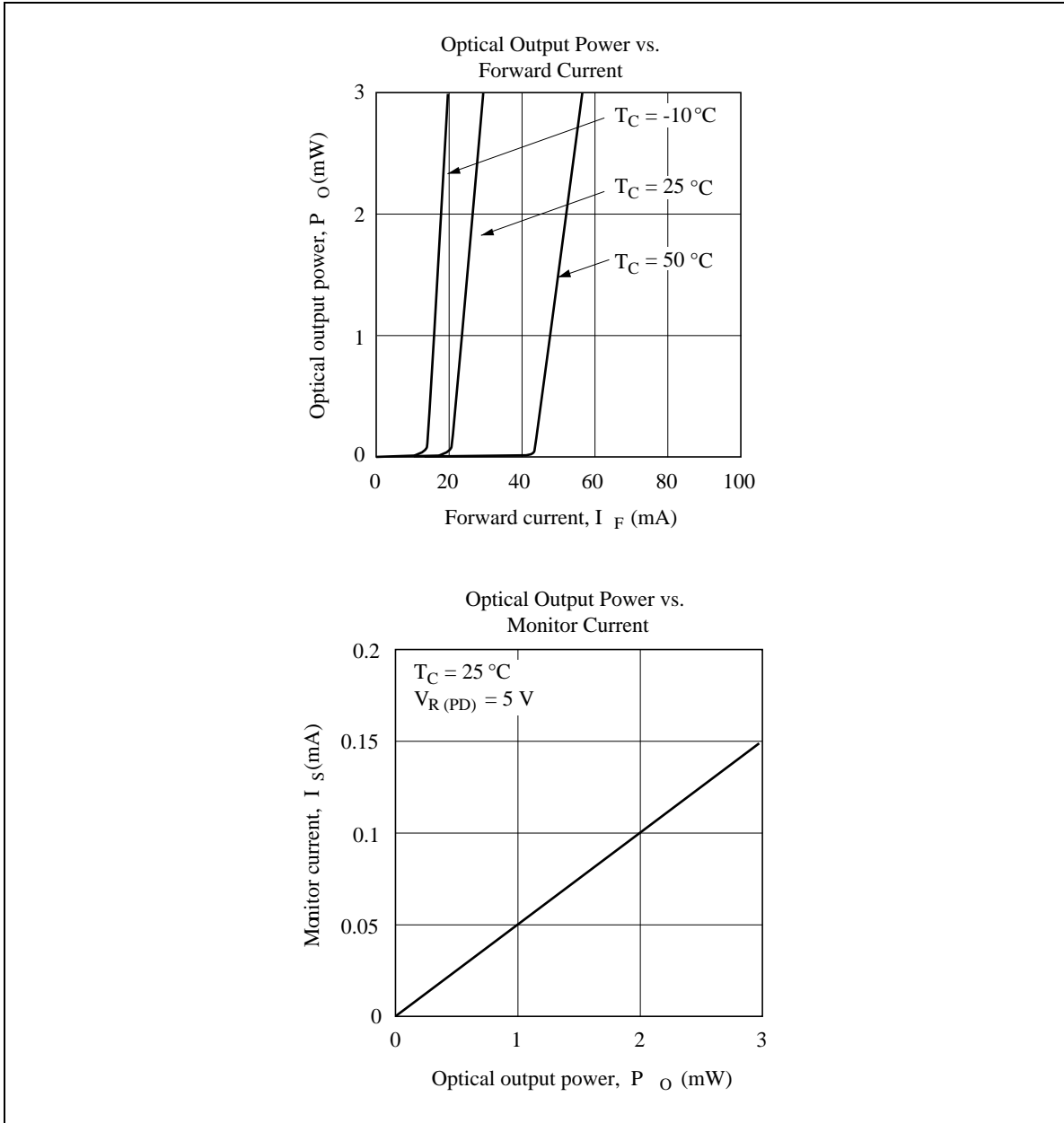
Item	Symbol	Rated Value	Unit
Optical output power	P_o	3	mW
Pulse optical output power	$P_{O(pulse)}$	5*1	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{opr}	-10 to +50	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

Note: 1. Pulse condition: Pulse width *1 μs , duty *50%

Optical and Electrical Characteristics ($T_c = 25^\circ\text{C}$)

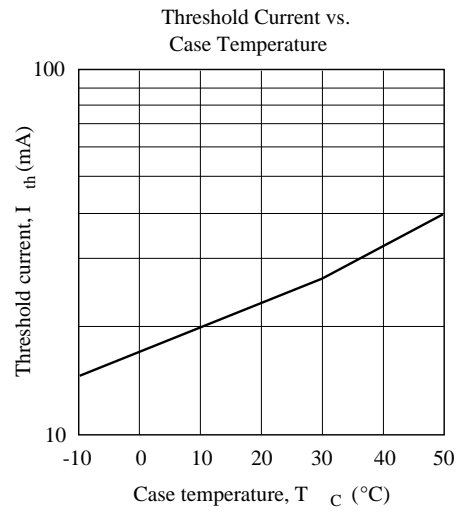
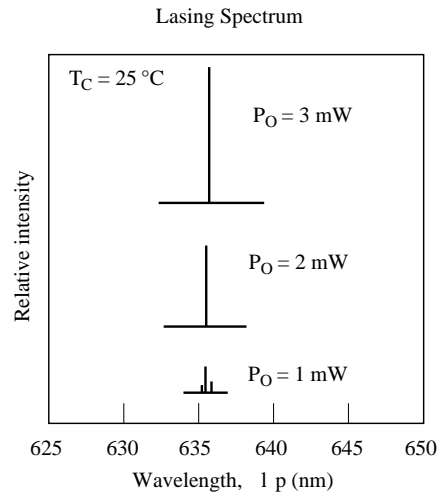
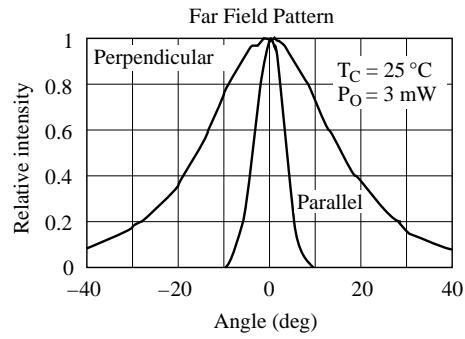
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_o	3	—	—	mW	Kink free
Threshold current	I_{th}	—	25	—	mA	
Operating current	I_{op}	—	30	—	mA	$P_o = 3 \text{ mW}$
Operating voltage	V_{op}	—	—	2.7	V	$P_o = 3 \text{ mW}$
Lasing wavelength	λ_p	630	635	640	nm	$P_o = 3 \text{ mW}$
Beam divergence (parallel)	$\theta_{//}$	6	8	10	deg.	$P_o = 3 \text{ mW}$
Beam divergence (perpendicular)	θ_{\perp}	23	30	39	deg.	$P_o = 3 \text{ mW}$
Monitor current	I_s	—	0.15	—	mA	$P_o = 3 \text{ mW}$, $V_{R(PD)} = 5 \text{ V}$

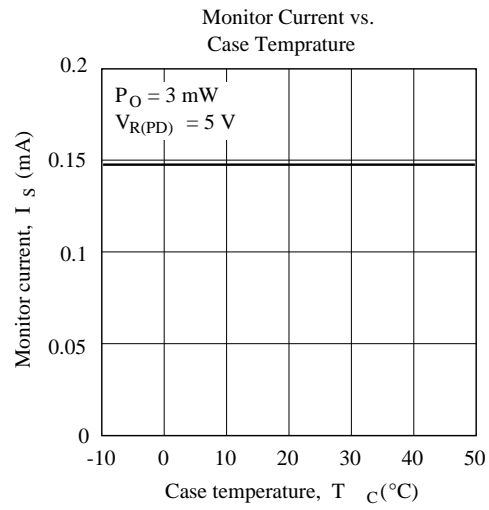
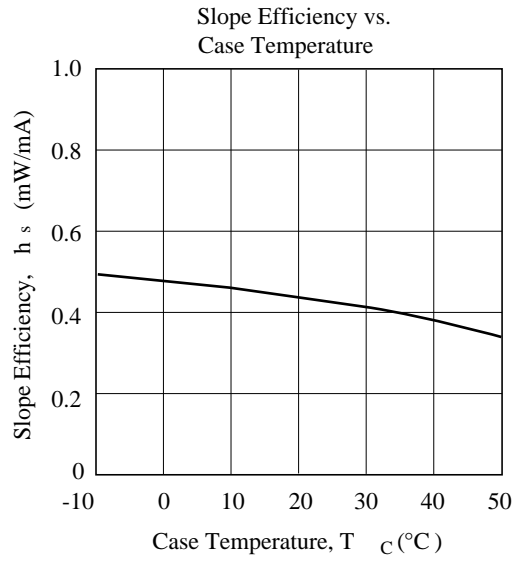
Typical Characteristic Curves



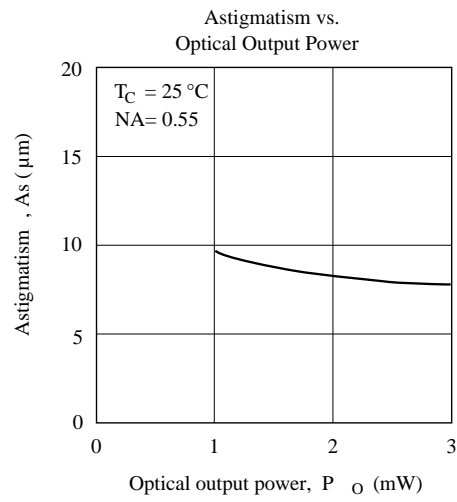
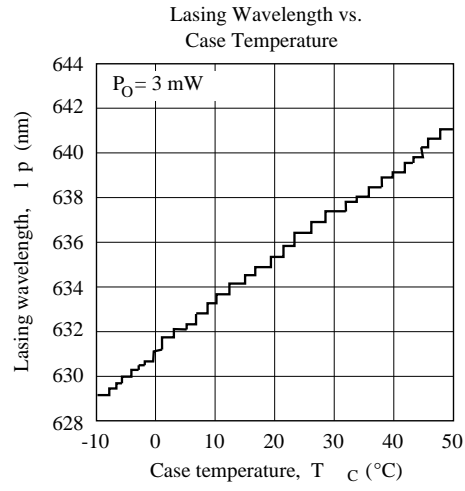
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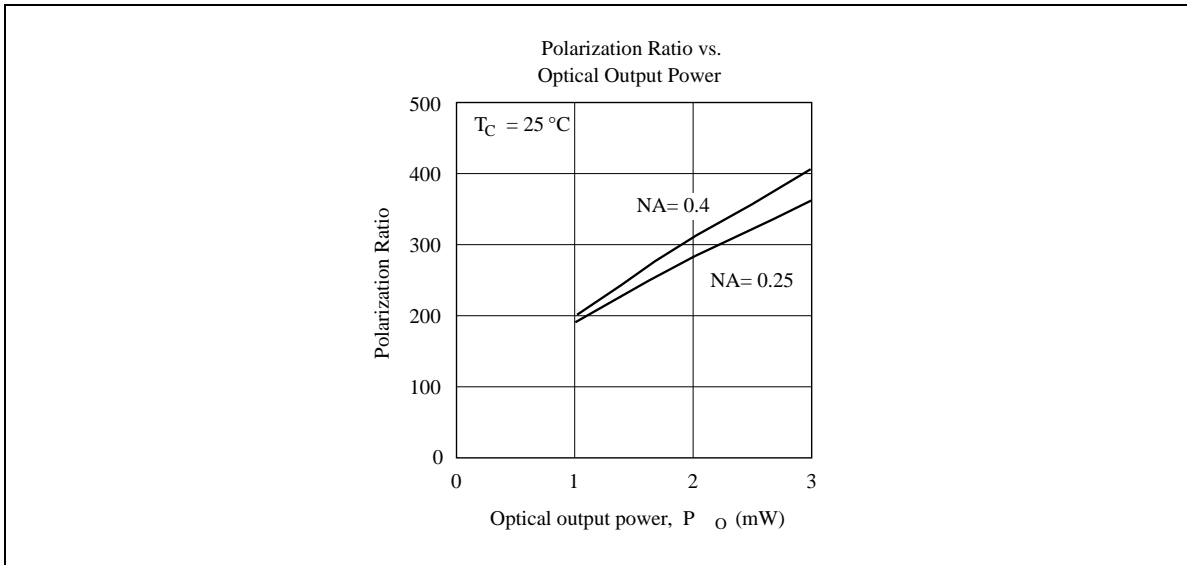
Typical Characteristic Curves (cont)





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Polarization direction

The polarization of 0.63 μm LD's is different from that of 0.83/0.78/0.67 μm LD's.

The polarization direction of 0.63 μm LD's is illustrated in the figure below.

